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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/555,899	07/20/2000	STEFAN BRAUCHLE	225/48888	8921
7590 03/04/2004			EXAMINER	
Crowell & Moring, L.L.P. Intellectual Property Group P.O. Box 14300 Washington, DC 20044-4300			DOROSHENK, ALEXA A	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 03/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/555,899

Applicant(s)

BRAUCHLE ET AL.

Examiner

Alexa A. Doroshenk *ADD*

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 14 and 25 is/are rejected.
- 7) ☒ Claim(s) 15-24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Page 6 refers to stage I and stage II with regard to Figure 1. There are no stages indicated in Figure 1.

Reference numbers 11a, 11b, 11c, 12a, 12b, and 12c are repeatedly referred to with regard to figures 1-8. It has been found by the examiner that only figures 7 and 8 illustrate a 12a and 12b. Reference numbers 11a, 11b, 11c and 12c are not found in any figures.

With regard to figures 7 and 8, on page 12, line 33 and page 14, lines 9-10 refer to reference number 12 which is not shown in either of figures 7 or 8.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

On page 7, line 1, applicant has recited "(2)", for clarification it is suggested that this be amended to "(Figure 2)".

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Page 9, line 20 recites "separating plate 17". It is believed by the examiner that this should be "end plate 17".

Page 10, line 26 recites "reaction chambers 5". It is believed by the examiner that this should be "reaction chambers 4".

Page 14, lines 11-12 and line 30 recite reference numbers 25 and 25.1 both as the "inner tube". It is unclear as to which is the inner tube, and what the other number is actually indicating in the figure.

Page 14, line 28 appears to be reciting that reversal apparatus 25.2 is the same as element 25.4. From the figure, it appears to the examiner that element 25.4 is referring to a flow direction. Clarification is required.

Appropriate correction is required.

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any further errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 13, 14 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Romatier (US 6,190,624 B1) in view of Heil et al. (5,874,051).

With respect to claims 13, 14 and 25, Romatier discloses an apparatus for catalytic oxidation with cooling means (col. 1, lines 37-40) comprising:

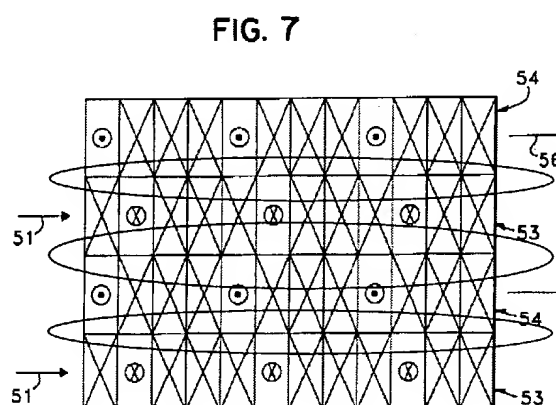
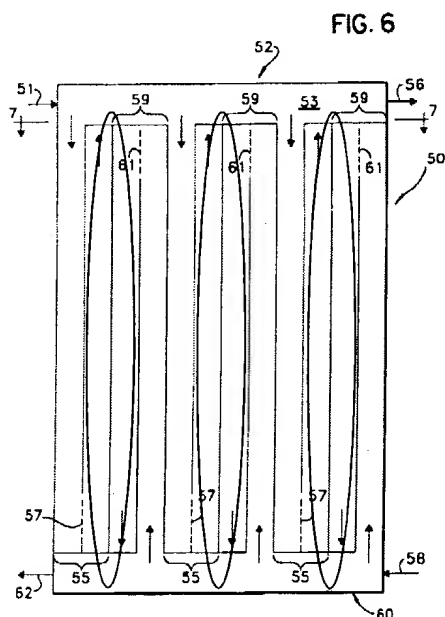
a plurality of reaction chambers (59) with catalyst (col. 3, lines 10-14) and a plurality of cooling chambers (55) (col. 9, lines 10-14) wherein said chambers are formed between successive plates and defining at least two stages in a plate stack (fig. 6 and col. 8, line 58- col. 9, line 14);

wherein said plates have openings that form inlet or outlet channels for the reaction chambers (61) and the cooling chambers (51);

wherein the reaction chambers (59) are each connected exclusively to inlet (58) and outlet (62) channels for the gas flow;

wherein the cooling chambers (55) are each connected exclusively to inlet (51) and outlet (56) channels for the coolant flow;

separating plates (shown as 22 in figure 2, but not numbered in figures 6 and 7, the separating plates are circled in the figures of Romatier below) arranged between at least two successive stages; and



a first apparatus (58) for supply gas to a first stage.

Romatier does not disclose a second or third apparatus for supplying a gas to at least one other stage following the first stage wherein the second or third apparatus leads into an outlet channel for the gas flow from a preceding stage.

Heil et al. also discloses a catalytic oxidation apparatus wherein the gas stream is cooled (see abstract). Heil et al. teaches the addition of oxidizing gas (3) at multiple points of the reactor (see figure 1) between individual oxidation stages (col. 3, lines 28-37) in order to suitably control the reaction heat and therefor achieve a desired temperature profile along the reaction path (col. 2, lines 5-15 and col. 6, lines 51-57). It

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would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the Heil et al.'s teaching of providing additional oxidizing gas suppliers between stages of the reactor of Romatier in order to achieve the ability to control the temperature of the reactor.

### ***Allowable Subject Matter***

7. Claims 15-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art neither teaches nor suggests the use of a tubular probe for the supply of oxidizing gas directly to an interior location of a plate reactor for selective catalytic oxidation of carbon monoxide.

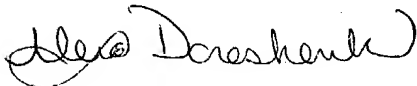
### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexa Doroshenk  
Patent Examiner  
Art Unit 1764

February 25, 2004